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ABSTRACT

This study investigated the interaction of child and parent gender with child responsiveness in determining parents' later selection of discipline. Participants were 40 parents and their preschool children (ten pairs each of mother/daughter, mother/son, father/daughter, and father/son combinations). After being separated from his or her child, each parent was told that the child was assembling a puzzle in an adjacent room and that the parent was to monitor the child's performance telemetrically. The child's successes and errors were indicated by a tone or buzz respectively and were registered on digital counters. The parent was to indicate on console pushbuttons the number of candies (0 to 9) to be added to the child's supply for a success or to be subtracted for an error so that the child would best learn how to do the puzzle. In reality, the child was playing in an adjacent room, and the events that the parent believed were being produced by the child were experimentally manipulated. In baseline, the child appeared to make 50% successes independently of the parent's teaching strategy. Successes then became contingent upon the parent's selection of high, and later low, intensities of punishment for errors. Finally, 100% errors were programmed regardless of parental punishment. Results indicated that the parents' and children's gender and the children's apparent responsiveness to parental discipline combined to determine the parents' administrations of rewarding and punishing consequences for the children's behaviors. (Author/JMB)

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Children's Gender and Responsiveness to Their Parents Influence Parental Discipline

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Abstract

Forty parents attempted to teach their child a task by selecting rewarding and punishing consequences for their child's successes and errors. However, their "child's" behavior was actually preprogrammed. In Baseline, the child appeared to make 50% successes independently of the parent's teaching strategy. Successes then became contingent upon the parent's selection of high, and later low, intensities of punishment for errors. Finally, 100% errors were programmed regardless of parental punishment. The parents' and children's gender and the children's apparent responsiveness to parental discipline combined to determine the parents' administrations of rewarding and punishing consequences for their children's behaviors.

The role of children in affecting their own socialization by their caretakers has seldom been studied (Bell 1971). According to Gewirtz and Boyd (1976), accounts of parent-child interactions should consider the reciprocal influences between both members of the dyad. Within such a framework, children are viewed as sources of stimuli that may exert functional control over their caretaker's behavior toward them. For example, a child's annoying behaviors may produce situational stress which acts to escalate maternal punitiveness toward the child (Passman & Mulhern 1977).

Particularly important in the process of the child's socialization is the pattern of rewards and punishments used by the caretakers. The gender of both the child and the parent have been among the most studied variables in this context. Several studies have investigated sex differences in caretaker-child interactions using naturalistic observation; however, as Margolin and Patterson (1975) note, much contradictory evidence has been generated about sex effects. The conflicting reports of cross-sex effects, same-sex effects, and their absence may be the result of uncontrolled variables combining to influence the significance of the parent's and child's sex in a social exchange (Yarrow et al. 1971). Thus, numerous salient but heretofore uninvestigated characteristics of the child may interact with the child's or parent's sex to determine how parents respond to their children. For instance, Dion (1974) found a cross-sex punishment effect related to the child's attractiveness. Like attractiveness, a child's responsiveness to an adult's behaviors may also influence the dyadic interaction. Mulhern and Passman (in press) experimentally manipulated boys' successful responding on a task to be contingent only upon their mother's selecting high intensities of punishment (defined as the subtraction of candies) for their sons' errors. These successes were found to reinforce increased

intensities of maternal punitiveness. When the contingency was reversed so that their sons' successes followed only the administration of mild punishers, the mother's punitive intensities decreased accordingly. In this study, however, only mothers with their sons were examined. It is possible that a child's sex may affect the manner in which children modify adults' disciplinary behaviors directed toward them. Yarrow et al. (1971), for instance, found that boys exerted more control over women's behaviors than did girls.

Children, then, may reinforce their caretaker's modes of interaction by engaging in behaviors which the caretaker perceives as desirable. In a disciplinary situation, the reduction of a child's aversive behaviors strengthens the punitive tactic that achieved the reduction through negative reinforcement (Parke & Collmer 1975; Patterson & Cobb 1971). At times, however, the relation between the disciplining by the parent and the resultant behavior of the child may be disrupted, and no changes in the child's behavior eventuate despite the parent's continued administration of punishment. In this case, the parent is in a situation akin to experimental extinction. Parental punitiveness may then be expected to accelerate as a result of either extinction-induced aggression (e.g., Kelly & Hake 1970) or merely the added situational stress (Passman & Mulhern 1977). Thus, the severity of parents' efforts to control their child's persisting aversive behaviors may directly depend upon the child's responsiveness to the punishments administered (Parke & Collmer 1975).

Experimental research has not addressed how the sex of a child and the sex of a parent interact with the responsiveness of the child to determine the parent's later selection of discipline. If children's patterns of responding were experimentally controlled, this potential interaction could be investigated while mothers and fathers tried to teach their sons and daughters by administering rewards for their children's successes and punishers for errors. In

the present study, children's successes were manipulated so that the parent's selection of first high and then low intensities of punishment produced the successes. Or, these contingencies were absent, and the child appeared to make either 50% or no successes, regardless of the parent's choice of punishers.

Subjects were recruited from a university day care directory. Forty parents accompanied by one of their childrne particpated: 10 mothers (M age = 30.5 years), and their daughters (M age = 57.1 months), 10 mothers (M age = 35.0 years) and their sons (M age = 54.8 months), 10 fathers (M age = 30.7 years), and their daughters (M age = 53.7 months), and 10 fathers (M age = 30.7 years) and their sons (M age = 57.4 months). All parents and children were from intact two-parent families of middle socio-economic level.

Each parent sat in front of a rectangular console labeled "Parental Judgment" which was situated on top of a table and contained 10 push buttons in a lateral arrangement (Mulhern & Passman, in press; Passman & Mulhern 1977). The buttons were consecutively numbered (from left to right) zero to nine. Two digital counters labeled "Successes" and "Errors" were located 10 cm above the console. A tone generator and buzzer were also present.

With several exceptions, the experimental design and procedure were similar to those used by Mulhern and Passman (in press). After being separated from the child, each parent sat in front of the Parental Judgment console. The parent was told that the child was assembling a puzzle in an adjacent room and that the parent was to monitor the child's performance telemetrically. Each success was marked by a tone and the addition of a point to the success counter, whereas each of the child's errors resulted in a buzz and the addition of a point to the error counter. The parent was to choose the number of candies (0 to 9 M&Ms) to be added to the child's supply for a success or to be subtracted for an error so that the child would best learn the puzzle.

In reality, the child was playing in an adjacent room, and the events that the parent believed were being produced by the child were experimentally manipulated. (Further reference to the "child" will actually be experimentally programmed events.) The child's performance consisted of successes (tones) and errors (buzzes) programmed on a single 10-min VT 15-sec tape loop. Although the parents believed that they were teaching their children, actually the child's behavior was being used to condition the disciplinary behaviors of the parents.

Baseline. Each parent responded to the same sequence of the child's making 10 successes and 10 errors, presented in a randomized fashion within a 5-min period. From each parent's responses to the 10 errors, a mean was computed and rounded to the nearest integer ($\geq .5$ was rounded upward). The Baseline integer value for each parent's punitiveness comprised the first criterion for Differential Reinforcement of High Positiveness (DRHP) Training and the last criterion for Differential Reinforcement of Low Positiveness (DRLP) Training.

DRHP Training. Beginning in this condition, only errors were programmed to occur. If however, the parent fulfilled the criterion for punitive intensity in effect, two consecutive successes occurred contingently before the next error. (Parent's rewarding for these successes was recorded but nonfunctional.) Punitive responses not fulfilling the particular criterion in effect resulted in the prescheduled error.

The initial criterion was the Baseline integer (x). This criterion remained in effect until the parent made three consecutive responses at or above the criterion intensity or had responded to 10 errors, whichever occurred first. If three consecutive responses at or above the criterion were made, the criterion was incremented by one (x + 1). If the parent had responded to 10 errors and at least one response had met or exceeded the criterion, the criterion was also incremented by one (x + 1). This increment in the initial Baseline criterion was programmed to occur at four different times (x + 1, x + 2,

x + 3, x + 4) during this condition, depending upon the parent's pattern of responding. When x + 4 was met, DRHP Maintenance was begun. If, however, in the process of ascending the criterion levels the parent failed to meet the criterion on any of the 10 trials at a particular level, the criterion reverted to the previous level, and DRHP Maintenance was begun. The same rules for transition held for each criterion change. An idealized case of a parent's response pattern is presented in Figure 1. Only those responses meeting or

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Insert Figure 1 about here

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exceeding the criterion intensity during DRHP Training and DRHP Maintenance result in consequent successes by the child. During DRLP Training and Maintenance, only those responses equal to or less than the criterion intensity are followed by the child's successes.

DRHP Maintenance. DRHP Maintenance was begun at the final criterion level achieved during DRHP Training. Each parent responded to 10 errors made by the child with this criterion for successes in effect. Each response at or above the criterion yielded two consecutive successes before the next error. The parent's responses to the child's successes were without consequence.

DRLP Training. This condition successively reduced the punitive criteria for successes from the DRHP Maintenance level toward the parent's initial Baseline level using the same number of steps as had been used in DRHP Training. At each criterion, the parent had to respond at or below the criterion to receive two successes from the child. The rules for transition from one criterion to the next were the same as in the DRHP Training condition. Responding to successes did not alter the child's behavioral pattern.

DRLP Maintenance. Following the parent's last response to the lowest DRLP

Training criterion achieved, the subject responded to 10 errors made with this final criterion in effect. Each response at or below the criterion yielded two consecutive successes before the next error.

Extinction. Each parent heard the child make 10 consecutive errors programmed on the same VT 30-sec schedule as during Baseline. The parent's responses to these errors were ineffective in altering this sequence.

Dependent Variables. The intensity of each punisher chosen by the parent for the child's errors and the intensity of each reward given for the child's successes were recorded.

Results

Intensity of Punishment

The mean number of candies subtracted by parents following their children's errors was subjected to a 2 (Sex of parent) x 2 (Sex of child) x 4 (Treatment condition: Baseline, DRHP Maintenance, DRLP Maintenance, and Extinction) analysis of variance. A significant three-way interaction was obtained, $F(3,108) = 3.09$, $p < .05$, as well as a main effect for the treatment condition, $F(3,108) = 35.21$, $p < .001$. As illustrated in Figure 2, planned comparison t-tests

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Insert Figure 2 about here

($p < .025$) revealed significant increases in punitiveness from Baseline to DRHP Maintenance by mothers toward their sons, mothers toward their daughters, and fathers toward their daughters. The increase exhibited by fathers toward their sons was marginally significant ($p < .06$). Each of these four groups next significantly decreased their punitiveness from DRHP Maintenance to DRLP Maintenance: Mothers toward their sons, mothers toward their daughters, fathers toward their sons, and fathers toward their daughters. In no case was

the intensity of punishment during DRLP Maintenance reliably different from that during Baseline. Finally, significant increases in punitiveness from DRLP Maintenance to Extinction were evidenced by mothers toward their sons, mothers toward their daughters, and fathers toward their sons. The increase for fathers toward their daughters was marginally significant, ($p < .10$).

To examine differences due to the sex of the parent or child, two-tailed comparisons ($p < .05$) were calculated between each of the four parent-child groups at each treatment condition. No reliable differences were found during Baseline. However, following conditioning of high punitiveness, a significant cross-sex effect emerged during DRHP Maintenance. As seen in Figure 2, mothers punished their sons more intensely than their daughters, whereas fathers punished their daughters more severely than their sons. Mothers punished their sons even more than fathers did their sons, or daughters. Also, mothers punished their daughters more than fathers punished their sons. After the conditioning of low punitiveness in DRLP Maintenance, mothers continued to punish sons more intensely than daughters or than fathers punished sons. No other differences were found during DRLP Maintenance.

During Extinction, sons were punished more by their mothers than by their fathers, and marginally more than daughters were punished by their fathers, ($p < .08$). Because of the theoretical importance of punishment intensities evoked during Extinction, a closer examination of the parents' response pattern in Extinction was made using a 2 (Sex of parent) x 2 (Sex of child) x 5 (Blocks of two consecutive trials) analysis of variance. Blocks was a repated measures factor involving five means of two trials each from the 10 responses made during Extinction. The sex of the parent by trial blocks interaction was significant, $F(4,144) = 3.53$, $p < .01$, but reliable effects involving the sex of the child

were not found. Two-tailed comparisons ($p < .05$) between mothers and fathers at each block of trials revealed no differences in punitive intensities until the fourth block (trials 7 and 8) when mothers began punishing their children more severely than fathers. As illustrated in Figure 3, the mothers' severity

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Insert Figure 3 about here

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of punitiveness relative to that of fathers is even more pronounced in the fifth block. Moreover, mothers tended to increase their punitiveness as a function of the number of consecutive errors they believed their children had made, whereas fathers tended to decrease their punitiveness. Thus, mothers' punitive intensities were greater in the third, fourth, and fifth blocks than in the first and greater in the fifth block than in the second. On the other hand, fathers exhibited the opposite pattern. Paternal punishment in the fifth block was significantly lower than that in the second and third blocks.

Intensity of Reward

To examine how rewarding covaried with changes in punishments, the mean number of candies given for successes was subjected to a 2 (Sex of parent) x 2 (Sex of child) x 3 (Treatment condition) analysis of variance. Treatment condition was a repeated measures factor referring to the experimental manipulation of the parent's punitive intensities during Baseline, DRHP Maintenance, and DRLP Maintenance. Since no successes (and therefore no rewarding) occurred during Extinction, this condition could not be examined. Both the sex of the parent, $F(1,36) = 11.72$, $p < .005$, and the treatment, $F(2,72) = 19.33$, $p < .001$, reliably influenced reward intensities, but the sex of the child exerted no significant effects. Two tailed comparisons ($p < .05$) between fathers and mothers at each treatment condition revealed that mothers rewarded their children's successes more than fathers regardless of treatment condition. In

addition, relative to Baseline, fathers and mothers together rewarded successes more during DRHP Maintenance and DRLP Maintenance. However, rewarding during DRHP and DRLP Maintenance was not reliably different.

Summary of Results

When all children were appearing to perform with 50% successes and errors (Baseline), no sex differences in parents' punitive intensitites were in evidence. However, mothers rewarded their children's successes more intensely than the fathers. Overall, parents rewarded their children's successes more intensely than they punished their errors. In DRHP Maintenance, each group of parents became more punitive than previously when high punitiveness resulted in children's successes. Moreover, parents were more punitive toward children of the opposite gender, with mothers administering more intense punishments than fathers. Although the administration of rewards for their child's successes was not directly manipulated by the experimental procedures, fathers and, to a greater extent, mothers rewarded their children more intensely during DRHP Maintenance than during Baseline.

Once children's successes were made contingent upon the parents' lowering the intensity of their punitiveness (DRLP Maintenance), each of the four groups of parents returned to the levels of punishment they used during Baseline. Notwithstanding the decreases in intensity, mothers continued to punish their sons more than their daughters and more than fathers punished their sons. Rewarding for successes, on the other hand, was as intense as it had been during DRHP Maintenance. Mothers rewarded more intensely than fathers, although no more quickly. In Extinction, when it appeared that the children were performing only unsuccessfully, all four parental groups increased their punitiveness during Extinction. Moreover, by the eighth consecutive error, mothers began to

become more punitive, whereas fathers became less punitive, than they had been earlier in Extinction.

Discussion

The results strongly indicate that children influence the parental discipline directed towards them. When the children's successes were arbitrarily contingent upon particular disciplinary strategies by their parents, the parent's behaviors changed accordingly. Therefore, these successes functioned as reinforcers for inducing either high or low parental punitiveness. These results demonstrate the functional control that children's behaviors have over those of their parents (cf. Bell 1971; Gewirtz & Boyd 1976). The findings also expand upon the reinforcement effects found in earlier studies using nonparents (Yarrow et al. 1971) and mother-son dyads (Mulhern & Passman, in press) to extend to all gender combinations of parents and their children. Of course, parent-child interactions cannot be accurately described solely in terms of the participants' sex. The sex of the parent and the child were found to interact with the child's behavioral pattern in determining parental punitiveness. Thus, the child's responsiveness to parental disciplinary behaviors must also be specified before any conclusions about the influences of sex differences are drawn.

When the children's successes reinforced their parents for punishing more intensely (DRHP), a cross-sex effect occurred. Sons exerted stronger reinforcement control over their mothers' punishing than did daughters, whereas daughters reinforced fathers more than did sons. This finding extends the contention that boys control women's behaviors more than do girls (Yarrow et al. 1971). However, when the contingency was reversed so that the children's successes followed only decreases in punitive levels (DRLP), gender did not

influence the child's ability to reinforce parents and the resultant punitive intensities.

In two conditions, parents' disciplinary behaviors exerted no effects on their child's experimentally produced behavioral pattern; thus, during Baseline and Extinction, reinforcement of parental behaviors could not occur. However, the child's behaviors appeared markedly different in these conditions and resulted in different parental punitive tactics. When the child's performance appeared to be 50% correct (Baseline), no effects due to the parents' or child's sex were evidenced. However, when the child made 100% errors (Extinction), the parents' sex significantly affected how severely the child was punished. Initially, both mothers and fathers increased their punitiveness as might be expected from an extinction-induced aggression hypothesis (Kelly & Hake 1970). Mothers then continued to accelerate, whereas fathers began to punish less severely. Thus, the absence of a contingency between the parents' behaviors and those of the child first escalated punitiveness, but eventually it differentiated mothers from fathers once the child's behaviors appeared unexpectedly unresponsive to parental discipline. From the parents' standpoint, this situation was stressful enough to evoke stronger attempts to suppress the child's behaviors (cf. Parke & Collmer 1975; Passman & Mulhern 1977). The present findings further suggest that mothers may be more susceptible to punishing severely under this type of stress than are fathers.

The effects of the parent's and child's sex on parental discipline are thus dependent upon the interrelationships among the parent's and the child's various behaviors. In the present study, gender became important when the child was reinforcing high but not low parental punitiveness. This finding is not unexpected since reinforcement for low punitiveness was a means for reachieving a

baseline during which sex differences had been originally absent. When the presence or absence of sex effects is examined as a function of parental punitive levels, an interesting fact emerges. Whether or not the child's behaviors were contingent upon the parent's, sex effects appeared only when the parents were induced to abandon their usual levels to punish more intensely. This finding may help clarify the absence of sex differences in parental punitiveness reported by some researchers who have used more naturalistic, observational methods (e.g., Margolin & Patterson 1975).

In previous studies (Mulhern & Passman, in press; Passman & Mulhern 1977), parents were given no occasion to reward their children's successes; therefore, rewarding is not a necessary component for the child's behavioral pattern to alter parental punitiveness. In the present design, the opportunity to reward successes was available, but rewarding never changed the child's apparent behaviors. Reward intensities varied with the sex of the parent and the particular punitive tactic being reinforced by the child's behaviors. Regardless of the child's sex, mothers rewarded more highly than fathers. When the child's successes were contingent only upon high parental punitiveness (DRHP), both mothers and fathers increased reward as well as punishment intensities. However, when the contingency was reversed (DRLP), parents continued to reward highly while decreasing punitiveness. At this point, these relationships are difficult to explain. It was as if reward intensities, which had increased concommitantly with punitive intensities during DRHP, were adventitiously reinforced and maintained by the child's subsequent responsiveness to the lowered punishment during DRLP.

The results support the notion that mothers may be more responsive to variations in their children's behaviors than are fathers. That is, children may exert more control over mothers' than fathers' behaviors toward them.

Mothers tended to reward their child's desirable behaviors more intensely than did fathers. In addition, mothers reacted more punitively than fathers when their child appeared unresponsive to their discipline. The apparently greater sensitivity of mothers than fathers to the children's behaviors may well be related to their prior experiences in interacting with their children. Since the majority of mothers in Western cultures have the responsibility for child care, mothers' behaviors have more opportunities to become controlled by their children. Thus, mothers should be more easily affected by changes in their child's behaviors than are fathers.

Cautious implications concerning the child's role in the development of aberrant child rearing techniques may be drawn from the results. It has been argued that the sex of the child and the sex of the parent (Gelles 1973), as well as characteristics of the child such as unattractiveness, irritability, and unresponsiveness (Parke & Collmer 1975), may be significant factors in the child's abuse. Perhaps the most compelling reason to advance an analogy between this study and the etiology of child abuse is that most abusive incidents occur during the caretaker's disciplining of the child (Gil 1970). Parke and Collmer (1975) have discussed how punishment might escalate to abusive levels over a series of unsuccessful disciplinary attempts. Thus, according to Passman and Mulhern (1977), the prophylaxis of child abuse should be facilitated by a more thorough understanding of parental disciplinary tactics. Admittedly, the punishment alternatives available to parents in this study were far removed from those usually thought to characterize child abuse. However, it is not the type of event as much as its severity that determines whether the event is abusive or not (cf. Parke & Collmer 1975). Agents that control a caretaker's decision to use increasingly aversive punishments may be similar in both abusive and nonabusive disciplinary situations. Two factors seem especially relevant toward

generalizing the present findings to child abuse. First, children are often unresponsive to parents' attempts to correct their misbehaviors. Both mothers and, to a lesser extent, fathers tended to increase punitiveness in this situation. Second, any desirable changes in a child's behavior that follow intense discipline may reinforce the parent for punishing severely. A parent who has been reinforced for increasing punitiveness in situations where initial punitive intensities were ineffective is eventually likely to adopt a new, more severe set of punishment alternatives (cf. Parke & Collmer 1975; Patterson & Cobb 1971). With repetitions of this process, the parents' ordinary punitive strategies may begin to border on abusive levels. If the child later appears unresponsive to these punishment levels, the parent may again escalate punitiveness until abuse occurs.

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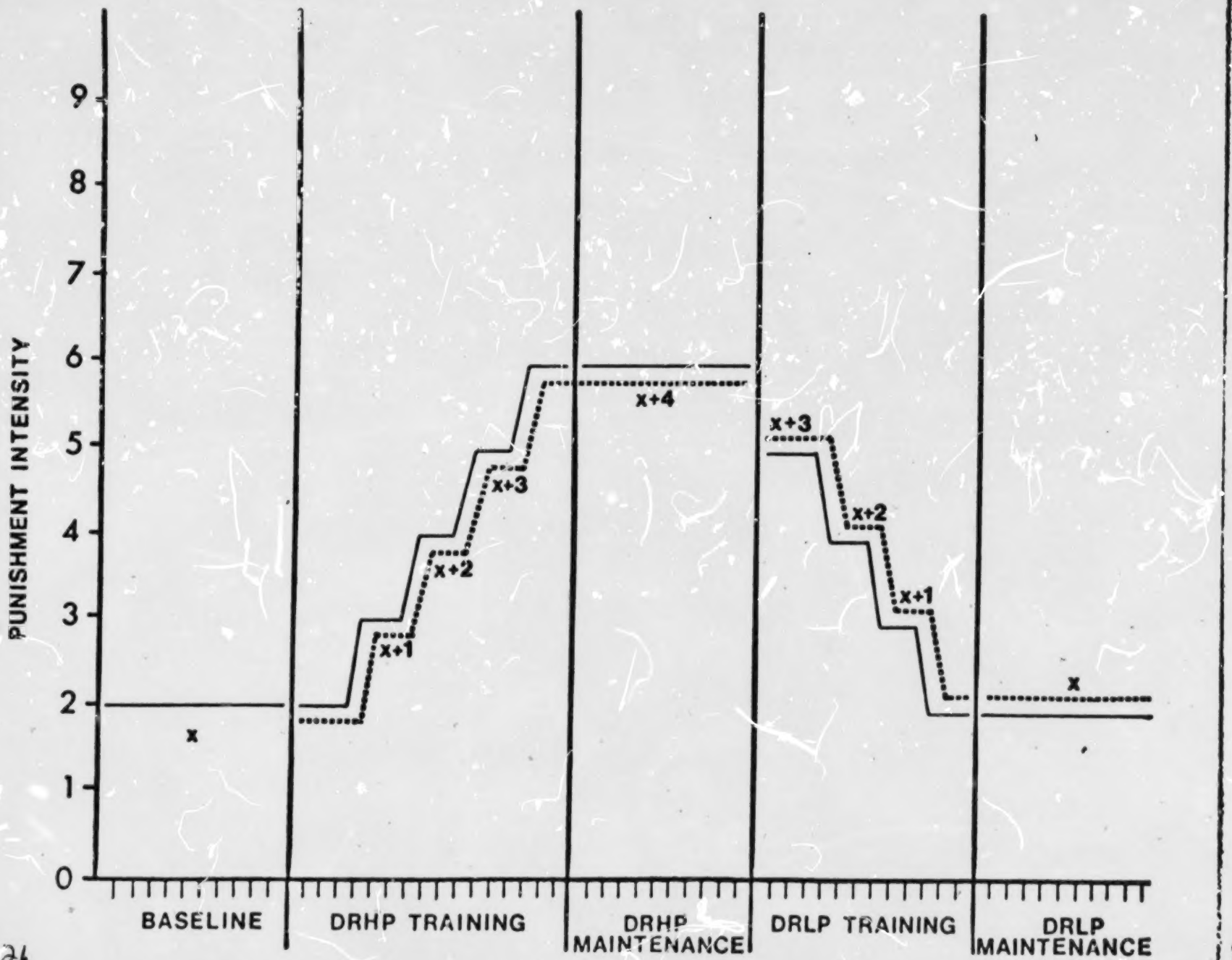
Figure Captions

Figure 1. Reinforcement criteria (dashed line) and punishment intensities selected by an idealized subject to illustrate DRHP and DRLP Training.

Figure 2. Mean punitive intensities selected by parents for their children during Baseline, DRHP Maintenance, DRLP Maintenance, and Extinction.

Figure 3. Mean punitive intensities selected by parents for blocks of two errors during Extinction.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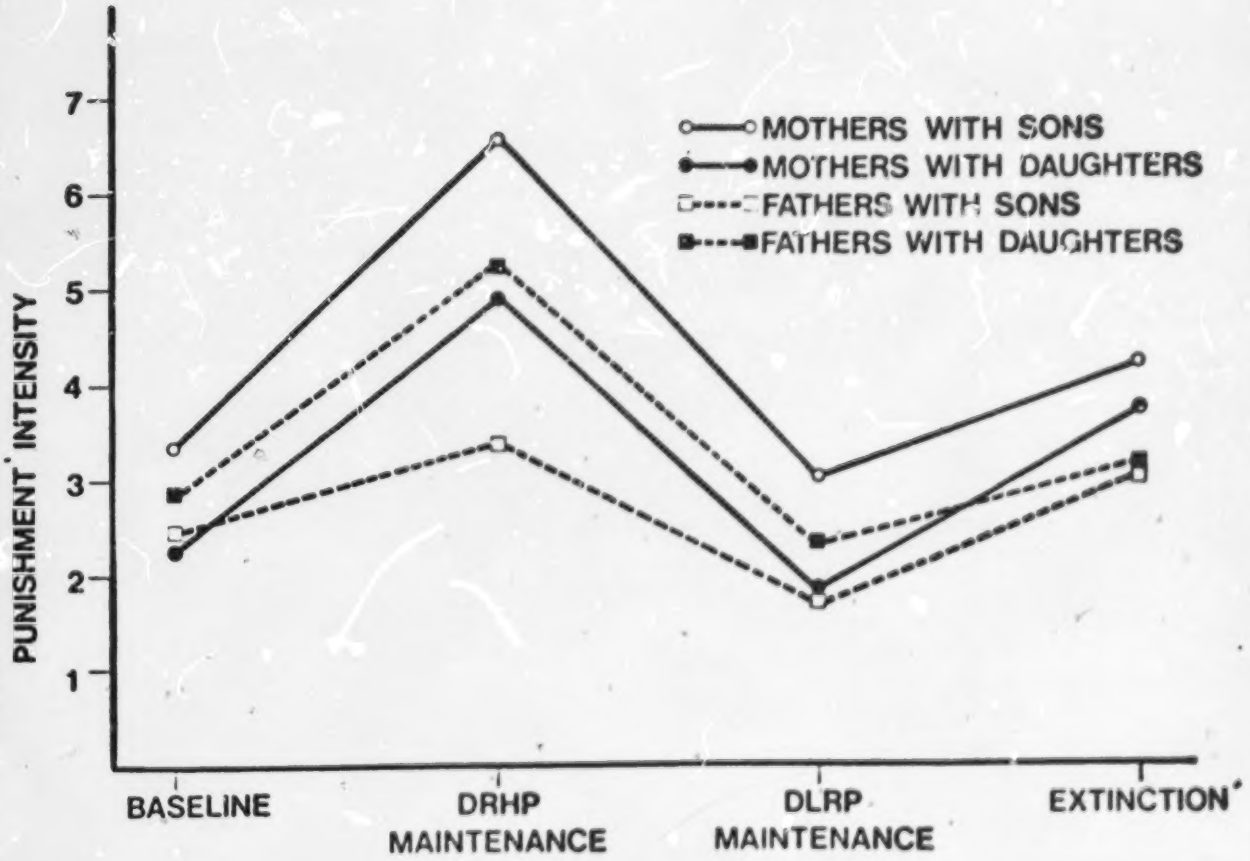
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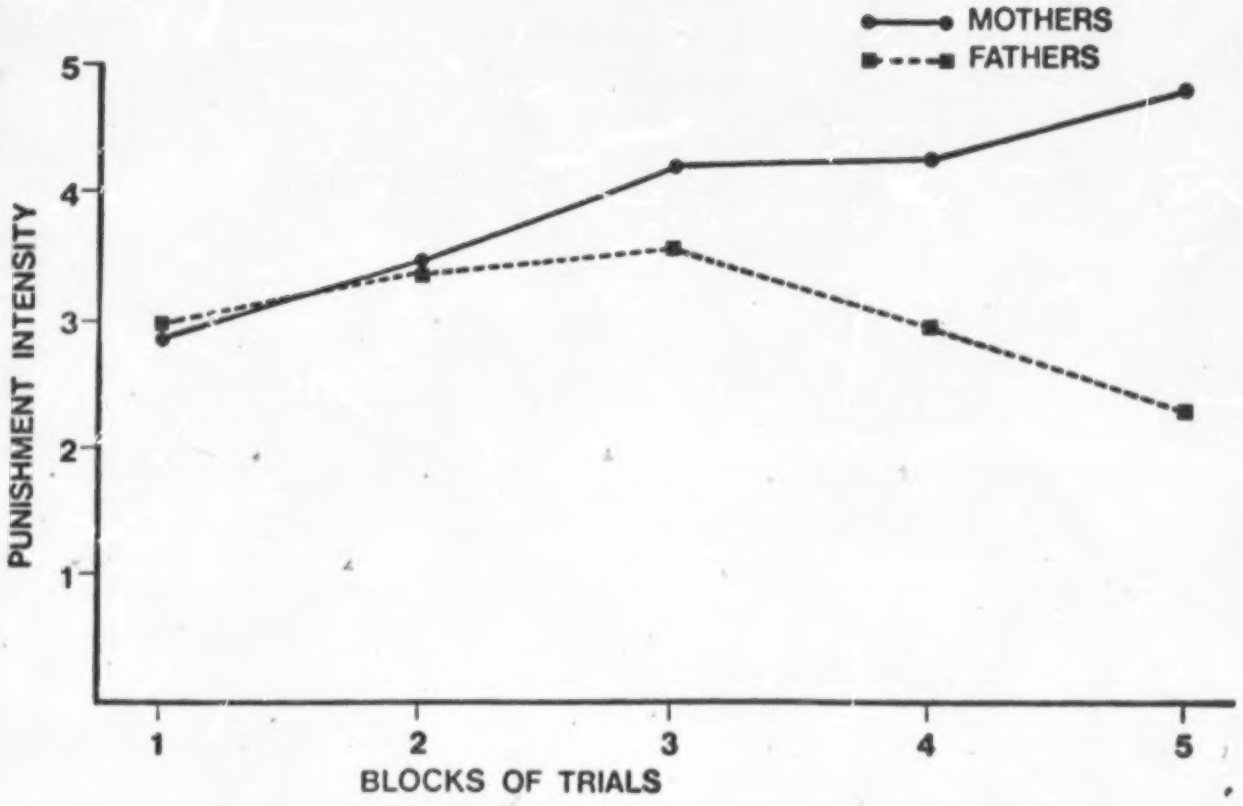
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